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CLINICAL OBSERVATIONS ON PERIODIC FEVER,

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ALTHOUGH we are not prepared to go all lengths with those who hold that all diseases are forms of ague, yet the importance of the subject is not likely to be appreciated in its full extent if we fail to recognize the fact that, the malarial principle, the acknowledged cause of Periodic fever, is reasonably inferred to exist in greater or less amount, in the atmosphere of every region of the globe; that over a large extent of the territory of our own country, it is present in a concentrated form, producing, as an effect, during the greater portion of the year, a disease of grave character and more general in its prevalence than all others together; that, in such districts, when not productive of the disease, *per se*, its influence may be impressed upon every other disease of the nosology, whether inflammatory, febrile or neurotic, functional or organic, either in their acute or chronic course, thus not infrequently sufficing to obscure or to mask them, and presenting a distinct and special indication for treatment.

If the subject be a trite and homely one, it is not the less important to those upon whose resources it will make everyday demands in the ordinary exercise of their calling.

Within the last decade, most valuable accessions have been made to our means of cure, and several erroneous opinions respecting the nature and treatment of this affection, the meanwhile have yielded to a more enlightened theory, as the basis of a more successful practice.

We do not propose in this brief communication, to enter at large into the discussion of the treatment of periodic fever, but only to offer some practical observations on several points connected with its management deemed of more than ordinary importance.

In order to avoid confusion, it is proper to state that in the term periodic fever, is embraced all of the divisions and subdivisions usually made by authors, of this disease, viz: intermittents, remittents or bilious remittents, congestive, etc. All of these we consider essentially identical, and we base this proposition on the following facts:

- 1st. The same causative agency is productive of all alike.
- 2d. The several forms are mutually convertible, the one into the other.
- 3d. The paroxysmal tendency is a trait common to them all.
- 4th. They are all controlled by the same curative means.

There is, doubtless, a practical convenience gained by these divisions, but it is at the risk of propagating an error; for the student and young practitioner are too prone to regard what may be treated of under separate heads, as separate and distinct entities.

With these facts before us, we are almost driven to the conclusion at which Bouillaud arrived on the subject, that these divisions of periodic fever are a "real nosological superfætation."

Notwithstanding the vast amount of research which has been expended on the subject of the primary or essential fevers, we possess but little positive knowledge to-day respecting their nature and causes, and of periodic fever, we are scarcely better informed than of its congeners. That they all have their seat in the blood is the most logical conclusion in the present state of knowledge on the subject; that each one has its own special cause, which is capable of producing it and none other, is more nearly certain; of these special causes again, we have but imper-

fect information as respects their generation, entrance into the system, and primary action in the body.

The ague-poison is doubtless of terrestrial origin, and the cryptogamic theory so ably enunciated by the late Prof. J. K. Mitchell, has lately received very strong confirmatory support from the results of Prof. J. H. Salisbury's elaborate investigations on the subject, it not yet being treated as an established fact. As to the mode of entrance of the poison into the blood, it is most probably by absorption from every absorbing surface of the body, but respecting its operation in the blood, we know positively nothing. Its effects on the system are all we can appreciate or understand.

The effects of the malarial poison in deteriorating or contaminating the blood, are singularly uniform and distinctive. This is exemplified in a striking manner in pernicious periodic fever, especially in that variety called *necremial*, in which the cause is so intensified, or the susceptibility so great,—or it may be from these two circumstances together,—that a series of destructive changes, septic, or zymotic, are set on foot, whereby the vital fluid is rendered unfit for the grand purposes of nutrition and secretion.

Anæmia is an almost uniform effect even in the primary career of the malady, and on its chronic course, an invariable attendant. Its features are best defined in those cases of protracted exposure to the operation of the poison, in which that dyscrasial state has been induced, known as the malarial cachexia.

From the phenomena presented in this condition, it is fair to conclude that, an active morbid material or process, has been at work in the blood whose most prominent effect is to disintegrate and despoil it of its essential solid constituents, its fibrine, albumen, and hæmatin.

The sequelæ of periodic fever (and their name is legion), may nearly all be traced to this peculiar anæmic constitution of the blood as their direct, or indirect cause. "The effects of anæmia are pallor, collapse, and shrivelling of the textures, weakening and eventual extinction of their functions." (Rokitansky.)

The spleen suffers more, perhaps, than any other organ of the body, from the direct effects of the poison, and as one of the functions of this viscus is supposed by physiologists to be, the

elaboration of fibrine, this interference with its functional activity may thus indirectly add to the general hydramia.

The foregoing brief summary of the principal concomitants and pathological effects of periodic fever, embraces the fundamental teaching of the most recent authorities on the subject. Unfortunately, a great deal yet remains to be verified or refuted by future research and observation. In the absence of positive information, the mind naturally strives to erect some plausible theory in explanation of the phenomena presented. We must have some sort of theory, indeed, on which to base a rational practice. "Experience without theory is blind."

It is matter of wonderment, that the old plan of treating this disease should have held its ground so long, after the more modern, and infinitely more safe and successful one of the present time, had been established and promulgated to the profession; and not less remarkable is it, that there are those among us who still adhere to the ancient dogmas of their early masters, with no less tenacity on this point than on many others long since obsolete.

To prepare the system for the reception of anti-periodics or tonics, even in the simple intermittent form of periodic fever, is, strange to say, still regarded as of paramount necessity by a few practitioners of the country, and the general course is to vomit, purge, mercurialize, and even bleed, before the system is considered in fit condition to receive quinia or its succedanea. Some carry the use of this class of remedies much further, regarding mercury and antimony as essentially curative in their effects, and with this view continue their use throughout the whole course of treatment, which, under such circumstances, is generally quite protracted.

But a much larger number at the present day, hold to the doctrine that in the treatment of that form of periodic fever, called, with doubtful propriety, bilious remittent, antiphlogistics, especially mercury and antimony, together with various eliminative means, are of indispensable utility.

This practice is based on the assumption that the liver is primarily and largely implicated in this form of disease, presenting a special indication for chologues, etc., and, that the employment

of quinia during the acute stage of this affection, whilst it promises no good as an ectrotic, is fraught with danger.

We believe it is not going far enough in condemnation of the antiphlogistic or non-abortive plan of treatment of periodic fever, to assert that this class of remedies is not indicated, or that their employment may do infinite negative harm, by standing in the way of appropriate means—as when they are vainly relied upon in ordinary periodic fever, which, in either of its forms, may, at any time, assume a pernicious character, but to this we should add, that they are directly and positively injurious.

Antimony and mercury may fairly be taken as typical of the class of antiphlogistic medicines, and whilst they possess neither tonic nor anti-periodic properties, their direct effect is to break down and impoverish the blood. Their operation in the blood must be analogous to that of the ague-poison, since the results of the operation of the two agencies, as respects the blood are very similar.

The correctness of these conclusions granted, we know of no principle on which their administration could be considered admissible, except the rule of the disciples of Hahnemann—“*similia similibus curantur*,” a doctrine not in favor with the orthodox sect, and opposed alike to logic and common sense.

While the antiphlogistic, or non-abortive system of medication, as applied to periodic fever, is not tenable on theoretical grounds, clinical observation furnishes irrefragable evidence of its inutility. In his admirable work on the “Principles and Practice of Medicine, 2d edition,” that pre-eminent author and teacher, Prof. Austin Flint, Sr., of New York, makes the following just observations on this subject: “For the cure of intermittent fever, medicine possesses specifics, if any remedies are entitled to this appellation. This statement applies especially to the salts of quinia, of which the sulphate is the one almost universally used. The sulphate of quinia will promptly interrupt the recurrence of the paroxysms of intermittent fever in the vast majority of cases. It is always desirable to arrest the disease as speedily as possible. Its morbid effects are less in proportion as it is quickly arrested, and the liability to relapse is diminished. There is no need of preparatory treatment. This position was taken by the author

in an article published twenty-five years ago. An experience embracing many hundred cases in different climates, since the date of that publication, has abundantly confirmed the correctness of this position. Aside from the delay in arresting the disease, the measures heretofore employed to prepare the system for the sulphate of quinia or other special remedies were injurious. The measures were, mercurial cathartics, emetics, and sometimes bleeding. These measures are not indicated in the treatment of intermittent fever. A consideration of no small importance, as enforcing an immediate employment of the abortive treatment, is the possibility of an intermittent fever, at first simple or ordinary, becoming, after several paroxysms, pernicious."

On the subject of treatment of remittent fever, the same distinguished authority gives the following sound precepts:

"The first and leading object in the treatment of simple remittent fever, is the arrest of the disease by anti-periodic remedies, of which the preparations of cinchona are by far the most reliable, the sulphate of quinia being the preparation to be preferred. As soon as the character of the disease is determined by the occurrence of a remission, the sulphate of quinia should be given in a full dose, viz., from ten to twenty grains to an adult. * * * If cinchonism be not produced during the remission, the remedy may be continued during the exacerbation of fever, * * * . In short the treatment is essentially the same as in cases of intermittent fever. And this plan of treatment will succeed, in a large proportion of cases, in promptly arresting the disease."

For a period of more than ten years, and in a field somewhat more extensive, we have adopted this abortive method in periodic fever, with results such as to enable us to add our unqualified testimony in favor of its adaptability, and efficiency, beyond all other plans; and this applies not less to remittents than to intermittents.

Formerly, our mode of treating periodic fever during the cold stage of the paroxysm, embraced little more than palliative means, abortive measures not then having been discovered. Recent discoveries and improvements in therapeutics, however, have supplied us with ectrotic remedies, by means of which this fever may be jugulated in the very height of its vio-

lence. No greater benefaction we believe, has been conferred on humanity during the present century, than the discovery, in 1852, by Prof. A. P. Merrill, of New Ycrk, of the value of chloroform internally administered, in the cold stage of fever. It is, indeed, a most fitting honor with which to crown a long, successful, and laborious life of devotion to science and humanity. In order to obtain the full measure of its therapeutic influence, chloroform should be given, as insisted on by Dr. Merrill, in "physiologic doses," of f. ʒi, to be repeated at the interval of fifteen minutes, or half an hour, till its full hypnotic effect is experienced. Employed in this way, it will, in a large proportion of cases, arrest the paroxysm in the first stadium, and when it fails to do so, it will almost invariably diminish its intensity, and to that extent, lessen the severity of the succeeding hot stage. We have employed the remedy largely in this condition for the last eight years, in the manner above specified, and we take pleasure in offering our feeble testimony as to its perfect safety and efficiency, in bringing about reaction from the cold stage of fever, beyond all other remedies with which we are acquainted.

Chloroform is not incompatible with other agents known to be useful in the treatment of periodic fever; it may, therefore, be employed in conjunction with other appropriate means, or, it may be assisted by such adjuvants as may be deemed advisable. If not retained by the stomach, it should be given per enema, suspended in glycerine or olive oil. It is quite as well adapted to the cases of children as to those of adult subjects, but, of course, the dose should be proportioned to the age.

The immense value of this agent can be duly estimated, only by witnessing its operation in the cold stage of pernicious paroxysm, in cases in which the patient is seen too late for the great anti-periodic quinia to be available. Such cases illustrate the fact, that "to know the natural course of disease, is more than half of medicine;" and guided by such instruction, the veriest expectante, it would seem to us, could scarcely feel content to adopt "a masterly inactivity." Perhaps, in no other pathological condition, is the curative power of medicine exemplified in a manner more positive and striking.

The subcutaneous injection of quinia in the cold stage of periodic fever promises valuable results, since by this method, its certain and speedy absorption by the venous radicles is secured. Thus administered, the constitutional effects of the agent will be experienced in from ten to fifteen minutes, and the quantity required to produce such results, is estimated at two-thirds the dose given by the mouth. Several examples of the success of this practice in the algid stage of pernicious paroxysm have been recently published in American medical journals.

In some cases of periodic fever, the remission is imperfect, or of short duration, and, under such circumstances, it may become necessary to continue the use of quinia during the hot stage of the paroxysm. It is well known, however, that, administered during the stage of reaction, quinia produces distressing nervous excitement in many cases, and in some, even dangerous consequences, if it be not tempered in its operation by some agent capable of mollifying its effect upon the nervous system. This difficulty may be obviated by associating with quinia, a sufficient quantity of ant. et pot. tartras. to produce moderate sedation, as evinced by slight nausea. Used for this transient purpose, antimony produces only its neurotic effect, sedation, without being open to the objection applicable to its protracted employment, viz., that of disintegrating the blood.

But an agent of more certain efficacy in tempering the harsh action of quinia administered during the pyrexial period of periodic fever, we have found, from numerous trials, to be hydrocyanic acid. This sedative, is, in like manner, applicable to those rare cases of idiosyncrasy, in which quinine, given even in the apyrexia, produces painful nervous phenomena. Under such circumstances, this agent will be found to act like a charm in procuring relief. Several instances have come under our observation, in which this idiosyncrasy amounted to complete intolerance of quinia, and, in these same cases, we have administered the remedy in combination with hydrocyanic acid thus so effectually softening its operation as to render the patient almost incredulous of the assertion that he had taken a remedy which, when not thus guarded, had given such distress.

To prove effectual, hydrocyanic acid should not be given in

infinitesimal doses. Ten drops of the medicinal acid (U. S. P.) may be taken as a medium dose; and this quantity may be safely repeated several times at the interval of fifteen or twenty minutes, if relief be not procured by the first dose. The one or two drop doses usually stated, will be found inadequate to produce any useful impression.

Our task is but half accomplished when we have arrested the course of periodic fever, its known tendency to recur being one of its most marked characteristics. Judging from our own observations, with reference to this point, we believe it is not an exaggeration of the facts to say, that the liability to a return of fever after it has been arrested, the subject remaining in a malarial district, amounts to nine chances in ten, if attention be not paid to prophylaxis. A single paroxysm deteriorates the blood, and lowers the vital powers of resistance to disease. In view of these circumstances, we have been for several years in the habit of prescribing for our convalescing chill and fever patients, the following, or some therapeutic equivalent:

R. Quinia sulphas, Ferri. pulv.....aa ʒ i,
 Strychnia..... gr. i,
 Gentianæ extract..... q. s.
 M. Ft. pil. No. xxx. S. One morning, noon and night.

Provided, a few paroxysms only have been suffered, this will be sufficient to reinstate the system, but, if great hydræmia exist, due to the protracted operation of the poison in the blood, it will be found necessary to continue the remedies above stated for a much longer period, in conjunction with the tinct. ferri. chloridi, gtt. 25 or 30, three or four times a day. Together with good alimentation, and a well regulated hygienic and calæsthenic system, we have rarely failed with the combination referred to, of effectually warding off a recurrence of the troublesome disorder.

In a future number of your excellent Journal, we hope to be able to give our experience with the sulphites in periodic fever, as we are now making them the subject of clinical study.

